



SAN BERNARDINO MICROWAVE SOCIETY, Incorporated

FOUNDED IN 1955

A NON-PROFIT AMATEUR TECHNICAL ORGANIZATION DEDICATED
TO THE ADVANCEMENT OF COMMUNICATIONS ABOVE 1000 MC.

W6IFE Newsletter

May 2010 Edition

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At the **June 3, 2010** SBMS meeting the "Tech Talk" will be **Walter Clark** with another of his interesting talks about the physics of radio using 10 GHz Gunnplexers as a tool for demonstration. The SBMS meets at the American Legion Hall 1024 Main Street (south of the 91 freeway) in Corona, CA at 1900 hours local time on the first Thursday of each month. The 2010 newly elected SBMS officers are noted in the above banner. Check out the SBMS web site at <http://www.ham-radio.com/sbms/>.

REMINDER- NO PARKING IN THE CHURCH LOT

Last meeting- Chuck, WA6EXV talked about the beacon he has built for Heaps Peak. More detail and pictures follow. The Japanese amateur probe heading to Venus is to be launched later in May. Data is to be on 5840 MHz. There are to be several other earth orbit microsats going along for the ride. The newly elected SBMS officers are listed in the banner above. **Thanks to Dick, K6HIJ for his service as Treasurer for many years.** There is to be a 10 GHz and Up contest committee formed to do some initial planning for the August/ September contest. Tony, KC6QHP has signed on to take care of the MUD 2010 tours. The JPL tour will be limited to 40 people and all have to have USA citizenship. An early registration prize and deadline is to be set up. Keep watch on the MUD2010 web site. Dick, K6HIJ presented a prototype MUD badge design. The results of the SBMS 2 GHz and UP contest will be reported next month when all the reports are received. The routed meeting sign in sheet ended up missing following the meeting so some info has been lost for this report.

Activity reported at the May SBMS meeting: Doug, K6JEY operated during the 2 meter EME contest on 21 April; Larry K6HLH made a 432 EME contact with Arecibo and he has been working with WA6EXV on a QTH-QTH digital mode contact; Pat, N6RMJ had some 2 GHz and Up contacts; Dick, K6HIJ has his 10 GHz LO working; Chris, N9RIN is still having problems with 2 and 3 GHz rigs; Mel, WA6JBD has new 4X4 and has been working on Cactus rigs; Gary, K6KVC did ATV work; Rein, W6SZ working with K6JEY on EME and worked on his 10 GHz rig; Bill N6NN had parts of a B-29 tail gun radar to show; Walt prepared the Gunnplexer article in the April newsletter; Bill, WA6QYR is working on a "new DSP-10 kit"; Chuck, WA6EXV finished the Heaps beacon and did some sun noise measurements on his 10 GHz EME station; Mike, KI6OPT did some magy work; Jeff, KN6VR is getting 1296 yagis to work; John, KJ6HZ worked with K6JEY on EME contacts; ATV check ins- AF6O, KC6QHP, N6TST, W6OYJ, KB6BXT, A6FT, K6GPS, W6KGE.

UNITEC-1 Signal Received!

CW and FSK signals were received in Japan from UNITEC-1 at a distance of 300,000 km on 5839.91 MHz, details at <http://sites.google.com/site/unitec1ops/>

Email below regarding tracking posted to moon-net list by Patrick Barthelow

73 Trevor M5AKA

Daily Amateur Radio Email/RSS News: <http://www.southgatearc.org/>

Unitec-1 Tracking Software, State Vector Friday, 21 May, 2010 14:34

Here is a site to get tracking data for Unitec-1. The Data is actually based on the other sat that Unitec-1 is trailing, so the accuracy is not necessarily very precise. I ran several tracks based on the earliest State Vector information, to see if it ever comes into view of Arecibo. So far, it appears not, unless I am overlooking something.

<http://sites.google.com/site/unitec1ops/swdownload>

Here is the first web published State Vector Information that can be plugged into the tracking application:

State Vector, (From Alex), http://wiki.oz9aec.net/index.php/Main_Page [UNITEC-1]

t_update_utc = 2010/05/20 16:20:00

t_epoch_utc = 2010/05/20 22:46:20

x_km = -8386.536214

y_km = 7748.324875

z_km = -6677.030000

dx_m_s = -7805.449103

dy_m_s = -747.877657

dz_m_s = -4141.600000

More information:

http://www.southgatearc.org/news/may2010/unitec_1.htm

<http://directory.eoportal.org/presentations/10002076/10002077.html>

For info on Unitec-1 go to <http://www.unisec.jp/unitec-1/en/top.html>

Scheduling.

June 12-14 VHF QSO Party

June 26 Field Day

July 1 Tech Talk Doug, K6JEY on "Using TV/Cable level meters for Antenna Measurements".

July 31 Tune up party. The San Diego Microwave Group will be leading the testing of 10 and 24 GHz rigs at Fairview Park in Brea around 10 am.

August 5 Tech Talk- Planning for the 10 GHz and Up contest.

August 7-8 UHF Contest

August 21-22 ARRL 10 GHz and UP contest 1st weekend

September 2 Tech Talk TBD

September 11-13 September VHF QSO Party

September 18-19 ARRL 10 GHz and UP second half

SBMS sponsored MUD 2010 October 21 to 24 Cerritos Sheraton Hotel. Website is microwaveupdate.org. Preregistration on line \$35. Hotel info on the web site. Thursday Tours. Friday talks and swap meet. Saturday talks, noise figure measurements, banquet and speaker. Sunday antenna measurements. Papers due 1 September for proceedings.

Wants and Gots for sale.

For Sale 30w 1296 MHz kit \$50 + \$5 for shipping Chris Shoaff cshoff@yahoo.com

C-Band LNB conversion

Tools and parts needed:

Exacto knife

Small blade screwdriver

Small Phillips screwdriver

Soldering iron and solder

Tweezers

Drill and drill bits. Size of drill bits is up to the user. A tap may be needed as well.

Screws, size is up to the user depending on the holes for the transition.

Hookup wire.

Washers

.141 semirigid with an SMA connector or another connection method to get the RF signal out.

Multimeter

This LNB was left in the original housing since I do not have the time or the patience to mill out a box for it. I found a WR229 to SMA transition for coupling the 3.4GHz signal in. For those that want to make a milled box, keep in mind that there is an inductor on the input of the first FET that is part of the matching circuit. It plays a big part in setting the NF of the amplifier. It will most likely require tweaking this into the correct position in order to get the lowest NF again.

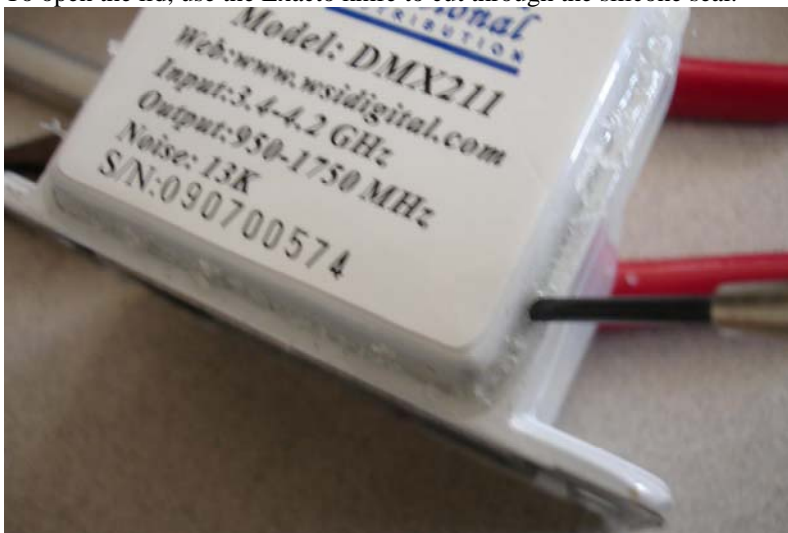
Here is the LNB.



As noted in the picture, be careful drilling the holes for the WR229 transition if you go that route. It is very easy to drill too far and damage the pc board.



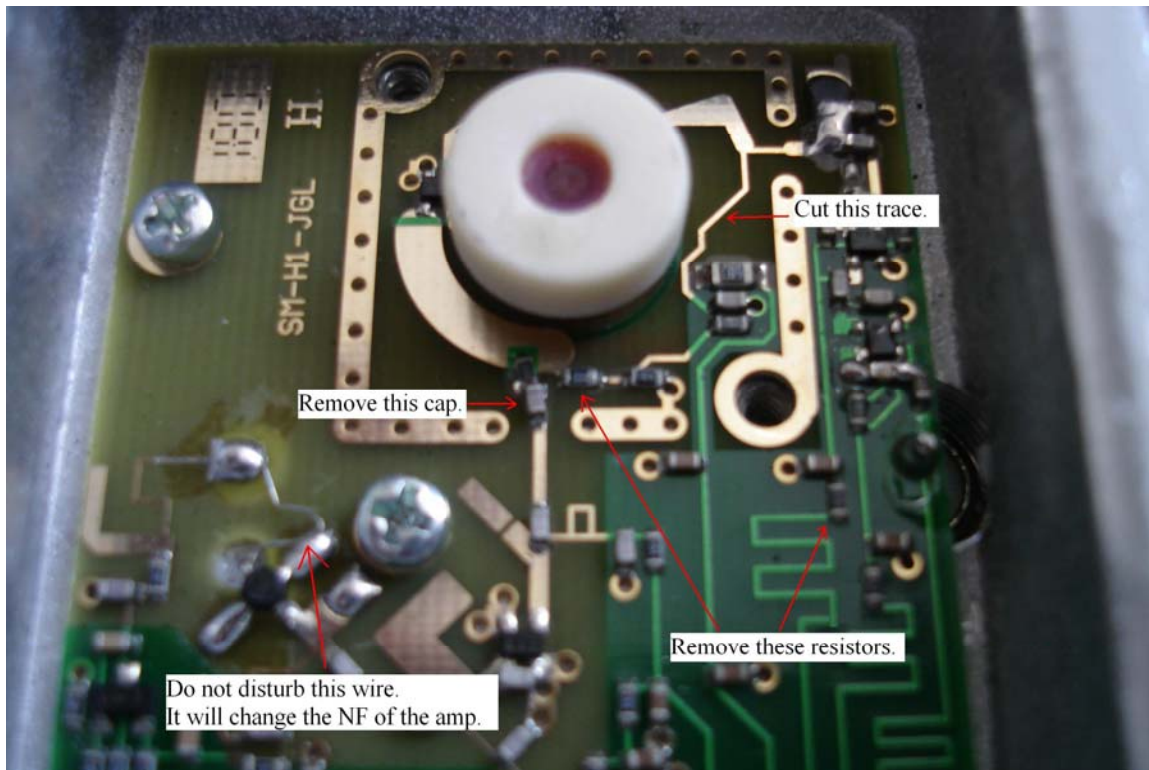
To open the lid, use the Exacto knife to cut through the silicone seal.



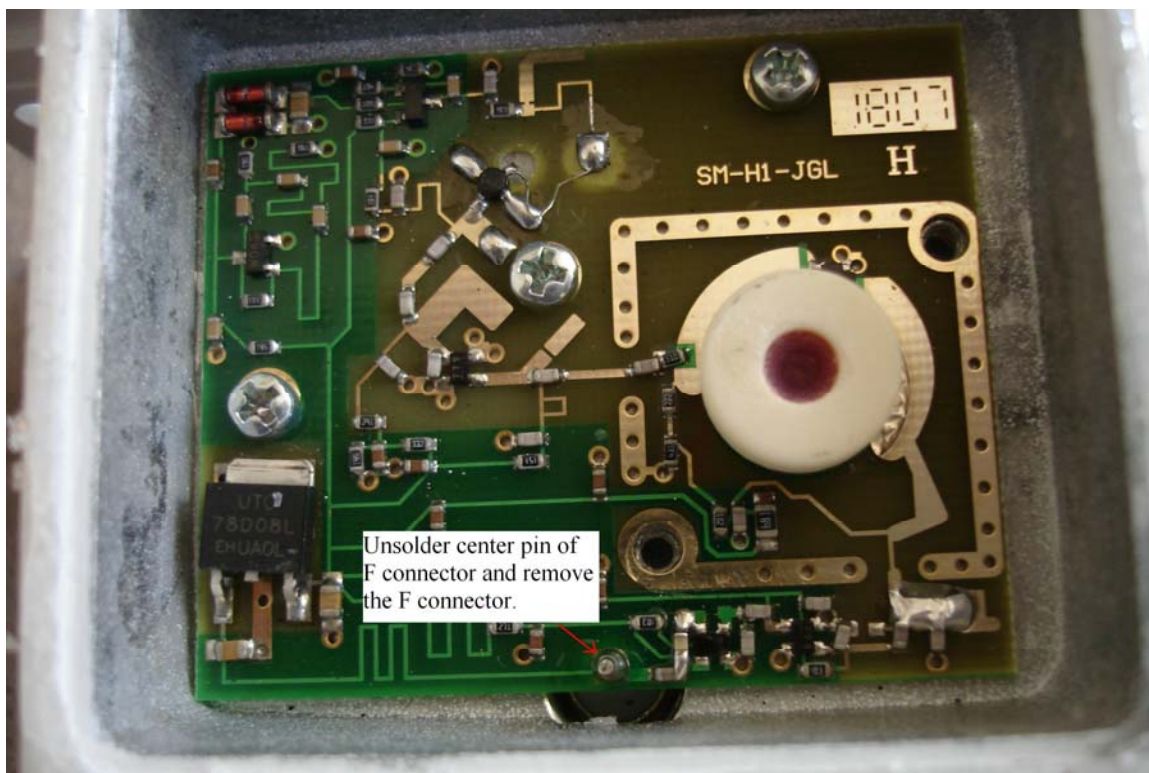
Use a flat blade screwdriver to pry the lid up.

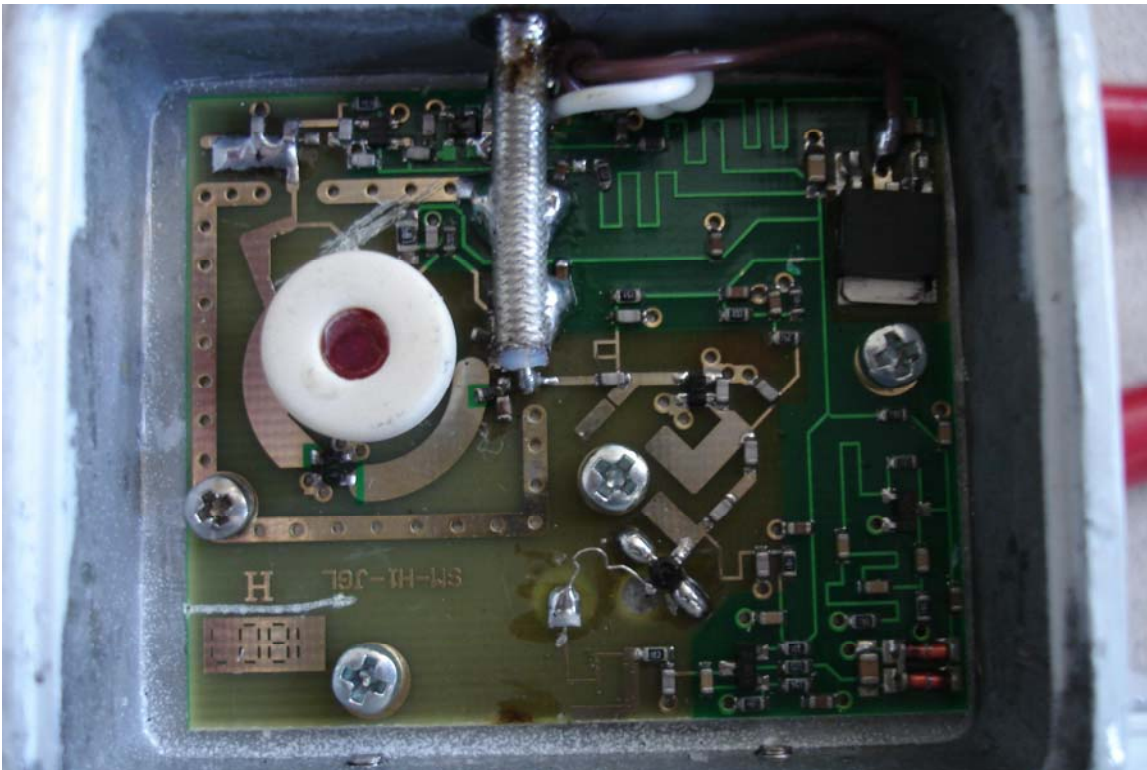


This is what you should see with the cover off. Unscrew and remove the metal cover that is under the foam. It will not be needed again but save the screws. This can is to shield the DRO. The DRO will be disabled since we do not need it.



The items in the picture above will disable the DRO, mixer and the final amp.





Here I used the existing hole from the F connector that was removed to route the power wires in. How the connections are made are up to you.

For the RF out, I drilled a hole large enough to pass the .141 semirigid through and soldered the center conductor as shown in the picture. The shield was soldered to the ground along the trace that was for the DRO shield can. Make sure the shield does not touch the power line. I installed one of the screws from the DRO can back into the open hole. It will need a washer or two added to it depending on the thickness of the washers.

Check for any shorts. If none are found, put the lid back on and attach the WR229 to SMA transition.





Test the amp as you would for any other LNA. My converted amp has about 30dB of gain and around a 1.2dB NF. I am happy with that and I am going to leave it as is. Your conversion may vary due to how you couple the signal out. If you have any questions, I can be reached at: cshoaff@yahoo.com

The place that the LNB can be ordered from is: www.hypermegasat.com It is the DMX 211 Digital Ready 13K C-Band LNB. The price ranges from \$13 to \$15. Thanks, Chris n9rin

Digital 10 GHz aircraft scatter--In a message dated 5/23/2010 3:12:22 AM Eastern Daylight Time, david@smithfamily.net.au writes:

Rex VK7MO and David VK3HZ have repeated their tests of aircraft scatter at 10 GHz using JT65c and succeeded in completing a contact over the 624 km path between Sunbury, Victoria and Mt Wellington, Tasmania.

Following the one-sided results for the first test, David replaced his preamp with a Kuhne unit and added GPS time syncing to the netbook.

This time, he received 14 decodes compared to Rex's 7 resulting in an easily completed contact.

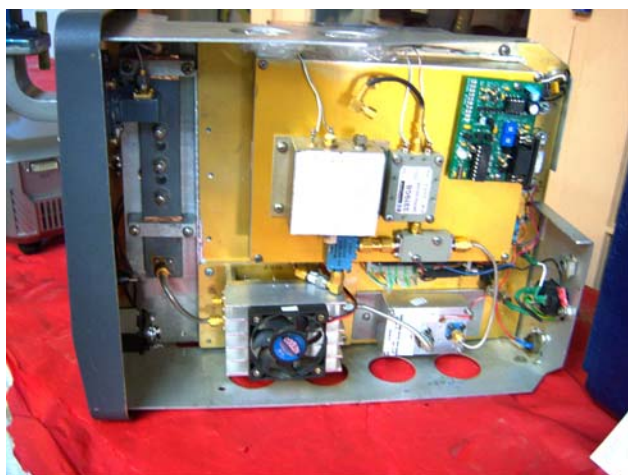
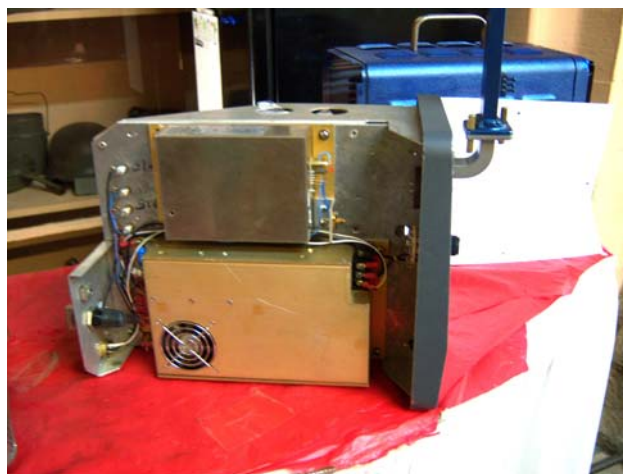
A more detailed report on our test is at:

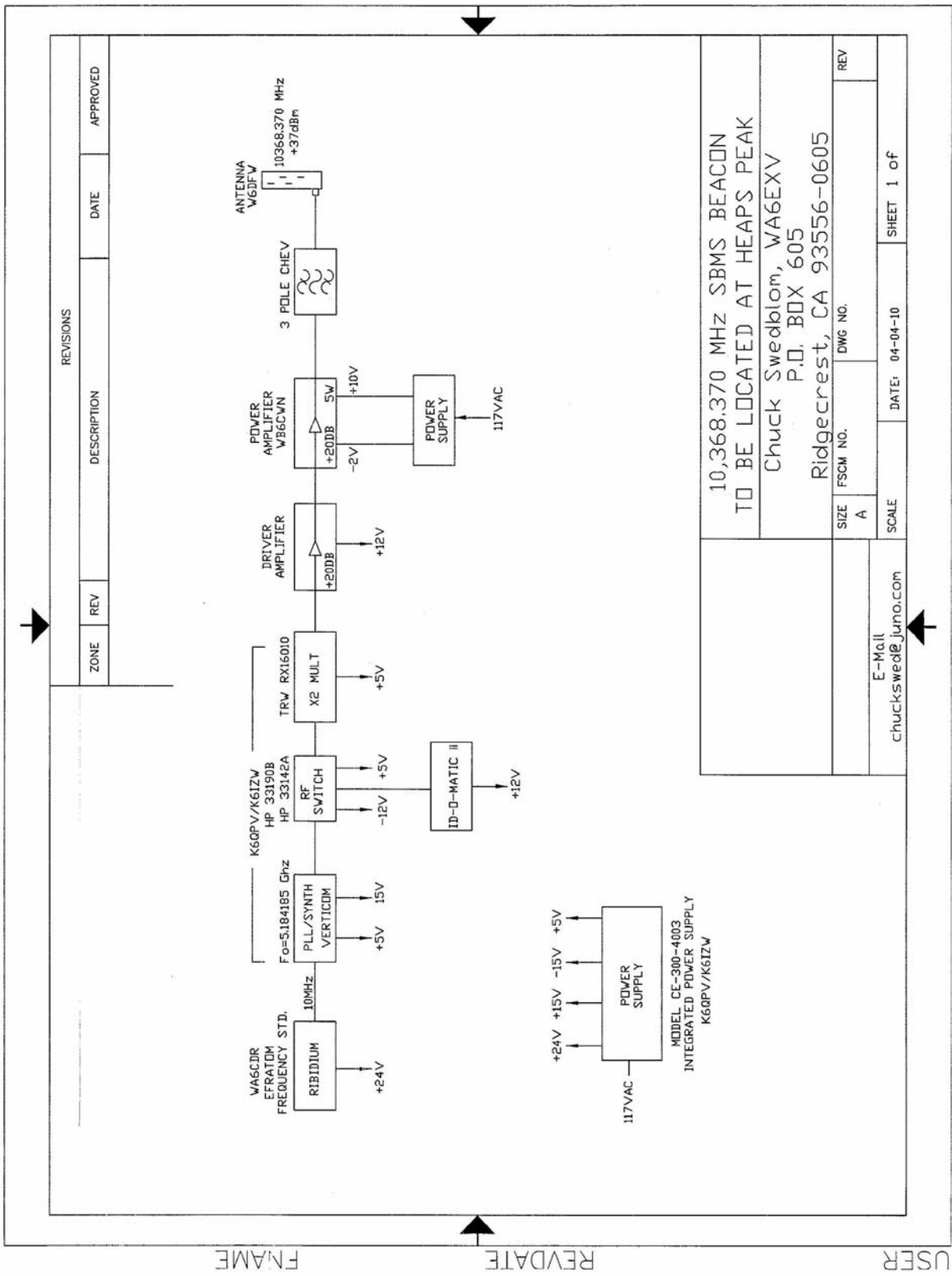
http://www.vk3hz.net/aep/AEP_on_10GHz_part_2.pdf

The previous attempt is described at:

http://www.vk3hz.net/aep/AEP_on_10GHz.pdf Regards, Dave VK3HZ

Chuck, WA6EXV carried to the May SBMS meeting his Rubidium locked synthesized 10 GHz 5W beacon that he hoped to mount at Heaps Peak DM12KF as soon as the snow clears. It will be using a slotted waveguide feed at about 15 ft with in the building. The main lobe +4dB of the one sided antenna will be pointed northwest toward the high Mojave desert. The -30 dB side will have more than enough signal to be copied through out the LA Basin. The beacon will be on 24/7 at 10,368.370 with CW IDer.







into the mail at least the week prior to the meeting. This is your newsletter. SBMS Newsletter material can be copied as long as SBMS is identified as source.

Dick, K6HLJ; Doug, K6JEY and Dick, WB6DNX talk about the wonders in the electronics world at the May 2010 SBMS meeting. . The San Bernardino Microwave Society is a technical amateur radio club affiliated with the ARRL having a membership of over 90 amateurs from Hawaii and Alaska to the east coast and beyond. Dues are \$15 per year, which includes a badge and monthly newsletter. Your mail label indicates your call followed by when your dues are due. Dues can be sent to the treasurer as listed under the banner on the front page. If you have material you would like in the newsletter please send it to Bill WA6QYR at 247 Rebel Road Ridgecrest, CA 93555, bburns@ridgenet.net, or phone 760-375-8566. The newsletter is generated about the 15th of the month and put

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